

BARIAKA ALOPIAE N. GEN., N. SP. (COPEPODA:
CALIGOIDA), A PARASITE ON THE GILLS
OF A THRESHER SHARK

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ABSTRACT

Bariaka alopiae, a new genus and species of caligid copepod is described from the gills of *Alopias superciliosus*, a thresher shark. This copepod has been placed in the family Eudactylinidae and it differs from all other members of the family in having 18 segments in the first antenna.

INTRODUCTION

During a 4-month period of participation in the International Indian Ocean Expedition, I collected many parasitic copepods from the fishes of the area. One of these, from the gills of the big-eye thresher shark, *Alopias superciliosus* (Lowe), represents a new genus of eudactylinids and is described below.

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EUDACTYLINIDAE Yamaguti, 1963

***Bariaka* n. gen.**

Diagnosis.—Female: body vermiform, considerably longer than wide, not flattened dorsoventrally. Cephalon only about one-sixth of total length. Head fused with thoracic segment bearing first pair of thoracic legs. Abdomen of 4 segments. Caudal rami small. First antenna of 18 segments. Second antenna uncinatate. Legs 1-4 biramose, all rami 3-segmented. Leg 5 present. Leg 6 reduced to knobs.

Male: body form as in the female. Abdomen 4-segmented. Caudal rami conspicuous. Appendages with same generic characters as female except leg 6 which is represented by 3 setae on the genital segment.

Etymology.—*Bariaka*, gender feminine, derived from the name of the research vessel AMBARIKA of the Station d'Océanographie et des Pêches, Nosy Bé, Madagascar.

Type species.—*B. alopiae*, n. sp.

***Bariaka alopiae*, n. sp.**

Material Studied.—Thirteen specimens (11 ♀♀, 2 ♂♂) collected from the gills of *Alopias superciliosus* (Lowe) caught off Nosy Iranja, Madagascar,

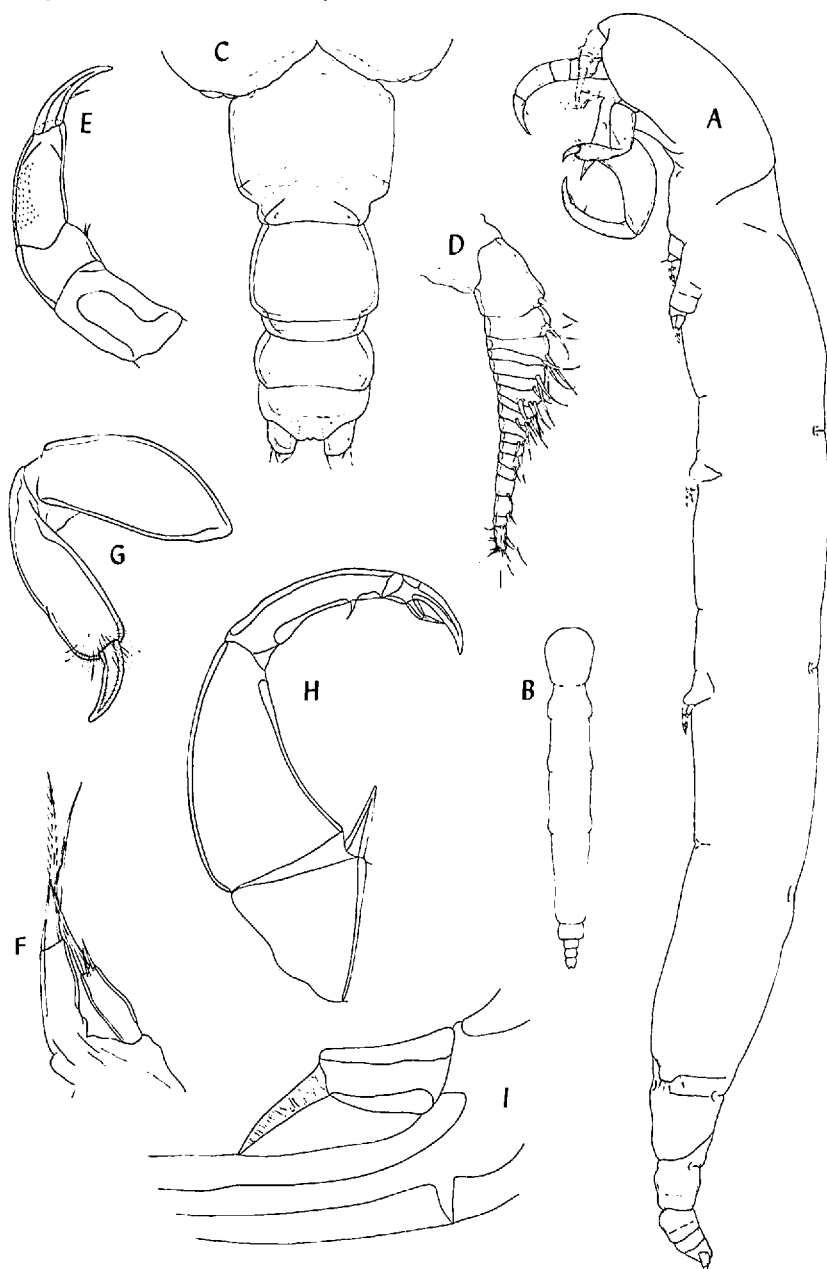


FIGURE 1. *Bariaka alopiae*, n. sp., female: a, lateral view; b, dorsal view; c, abdomen, ventral view; d, first antenna; e, second antenna; f, first maxilla; g, second maxilla; h, maxilliped; i, detail of spine on maxilliped.

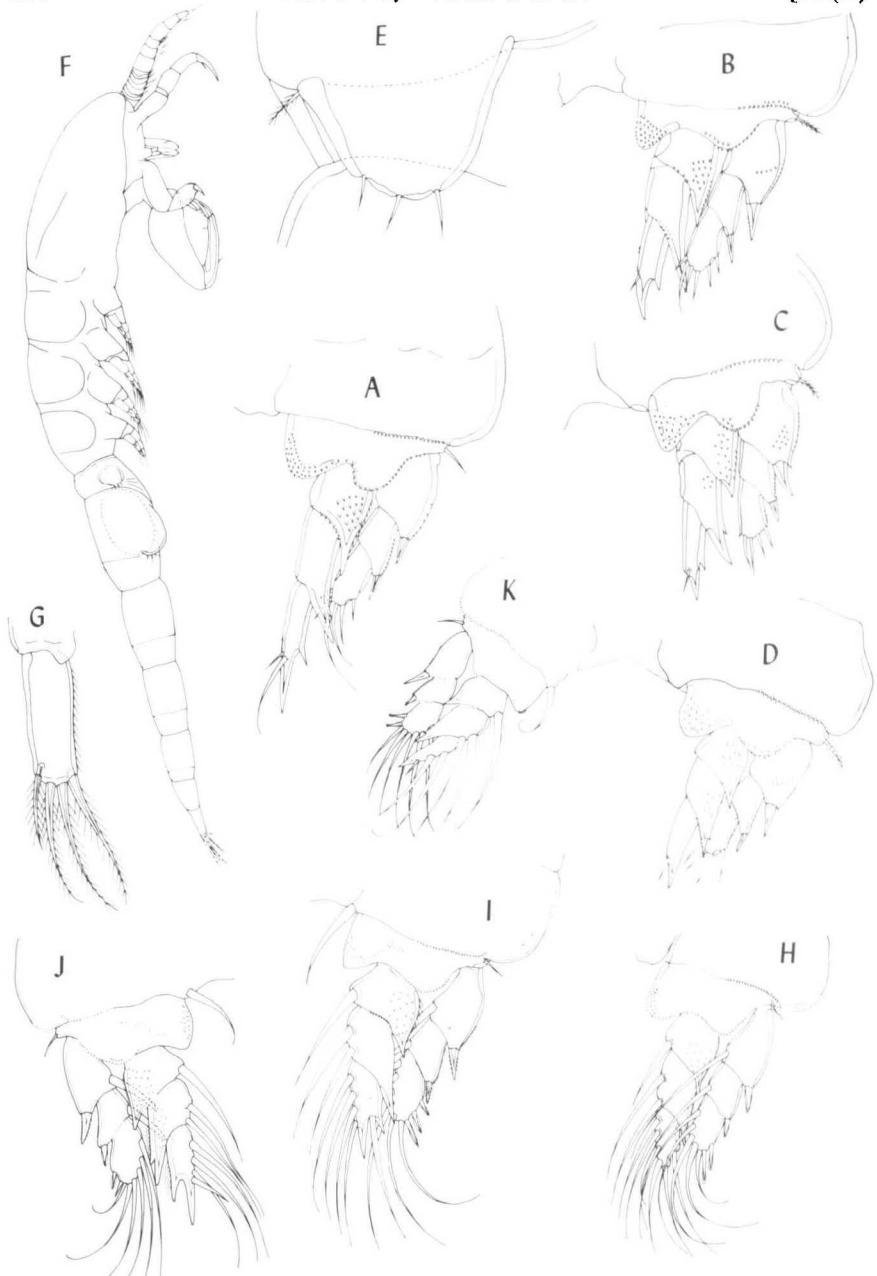


FIGURE 2. *Bariaka alopiae*, female: a, leg 1; b, leg 2; c, leg 3; d, leg 4; e, leg 5; male: f, lateral view; g, caudal ramus; h, leg 1; i, leg 2; j, leg 3; k, leg 4.

April 9, 1964. Two females from the gills of the same host collected by S. Kato, California Fish and Wildlife Service from the Pacific Ocean (0°38'N, 124°23'W).

Types.—The holotype female (USNM 113035), allotype male (USNM 113036), four paratype females (USNM 113037) deposited in the U. S. National Museum, and three paratype females deposited in the Muséum National d'Histoire Naturelle at Paris.

Description.—Female: body form as shown in Figure 1, a and b. Total length 9.4 mm; greatest width 1.0 mm. Cephalon about one-sixth total body length; widest anteriorly, tapering slightly to posterior border; posterior corners merging with thoracic segments and not projecting. No dorsal plates present. Genital segment fused with last thoracic segment and bilobed on its ventral posterior border. Abdomen (Fig. 1c) 4-segmented. Caudal rami small, attached along the lateral edges of the abdomen and bearing 4 short naked setae on the posterior borders. Oral area strongly modified for prehension. First antenna (Fig. 1d) of 18 segments each bearing naked setae as illustrated. Second antenna (Fig. 1e) 4-segmented; inner border of second segment with 2 setae; third segment with median patch of spinules; terminal segment modified as a claw, bearing seta near the middle of inner border. Mandible a styliform process lying within the mouth tube and of the usual caligoid type. First maxilla (Fig. 1f) biramose; exopod with 3 setae at tip, 1 prominent, other 2 small; endopod with 2 prominent setae at tip, shorter one armed with short hairs. Second maxilla (Fig. 1g) 3-segmented; penultimate segment with distal patch of hairs, terminal segment in the form of a stout claw. Maxilliped (Fig. 1h) 3-segmented; inner border of basal segment bearing spine-like process; terminal claw with 2 stout setae, distal seta as in Figure 1i.

Legs 1-4 biramose, with spine and setal formula as follows (Roman numerals refer to spines, Arabic numerals to setae):

| | Leg 1 | | Leg 2 | | Leg 3 | | Leg 4 | |
|--------|-------|-----|-------|-----|-------|-----|-------|-----|
| | exo | end | exo | end | exo | end | exo | end |
| Seg. 1 | I:0 | 0:0 | I:0 | 0:0 | I:0 | 0:0 | I:0 | 0:0 |
| Seg. 2 | I:0 | 0:0 | I:0 | 0:0 | I:0 | 0:0 | I:0 | 0:0 |
| Seg. 3 | 6 | 2 | 6 | 1 | 5 | 1 | 4 | 1 |

Leg 1 (Fig. 2a) with both rami 3-segmented, armed with patches of spinules on basipod and first segment of endopod; outer distal corners of endopod segments produced to form prominent spiniform processes. Leg 2 (Fig. 2b) in general like leg 1 but with additional spinules on first exopod segment and second endopod segment; terminal endopod segment with tip produced to form prominent non-articulated spine. Leg 3 (Fig. 2c) similar to leg 2 but with 1 less seta on last exopod segment. Leg 4

(Fig. 2d) like leg 3 but with fewer setae. Leg 5 (Fig. 2e) attached somewhat laterally (see Fig. 1b), consisting of lobe bearing 3 naked setae with a plumose seta near base. Leg 6 reduced to a lobe or series of lobes at area of egg string attachment on posterior corners of genital segment. All setae on rami of legs 1-5 naked. Egg strings long, uniseriate, and of the usual caligoid type.

Male: body form as shown in Figure 2f. Total length (including caudal rami but not setae) 5.8 mm; greatest width 1.0 mm at cephalon. Cephalon about one-fourth body length; modified for prehension as in female. Thoracic segments incompletely articulated, with saddle-like sclerotizations on dorsal surface of segments 2, 3, and 4. Abdomen 4-segmented. Caudal rami (Fig. 2g) conspicuous and bearing 6 setae; the 4 terminal setae plumose, the 2 subterminal setae naked. Inner margins of rami plumose. Oral area as in female.

Legs 1-4 biramous with spine and setal formula as follows:

| | Leg 1 | | Leg 2 | | Leg 3 | | Leg 4 | |
|--------|-------|-----|-------|-----|-------|-----|-------|-----|
| | exo | end | exo | end | exo | end | exo | end |
| Seg. 1 | I:1 | 0:1 | I:1 | 0:1 | I:1 | 0:1 | I:0 | 0:1 |
| Seg. 2 | I:1 | 0:2 | I:1 | 0:2 | I:1 | 0:2 | I:0 | 0:2 |
| Seg. 3 | II:5 | 6 | III:6 | 5 | II:6 | 4 | II:6 | 3 |

Leg 1 (Fig. 2h) with patches of spinules on basipod and first endopod segment; exopod spines with lateral clear hyaline membranes; setae long and plumose. Leg 2 (Fig. 2i) with patches of fine spinules on basipod and first endopod segment; exopod spines fringed or with clear hyaline membranes; endopod segments with outer distal corners produced to form spine-like processes; setae long and plumose. Leg 3 (Fig. 2j) with patches of fine spinules on basipod and first 2 endopod segments. Outer distal corners of endopod produced as in leg 2. Leg 4 (Fig. 2k) with 2 rows of spinules as in the figure; exopod spines with hyaline membranes; endopod segments with outer distal corners produced as in preceding legs. Leg 5 as in female. Leg 6 a lobe bearing 3 setae and located on the distal corner of the genital segment.

Etymology.—The name *alopias* is derived from the generic name of the host.

Remarks.—This new genus differs from all other members of the family by the number of segments in the first antenna (18 in *Bariaka*, 13 or less in all others), and by the number of segments in the abdomen (4 in *Bariaka*, 3 or less in all others). It can be further separated from *Kroyeria*, *Kroyerina*, and *Lamproglena* by the nature of the second antenna; in *Bariaka* it is uncinata, in *Kroyeria* and *Kroyerina* it is chelate, and in *Lamproglena* the claw is lacking.

Collections of this copepod from *Alopias superciliosus* at two widely separated stations (Madagascar and eastern Pacific) suggests a possible affinity of the copepod for this host. It is interesting to note that another new genus was recently described (Cressey, 1964) from this same host. So far, both of these new genera are known only from this species of shark.

SUMARIO

Bariaka alopiae N. GEN., N. SP. (COPEPODA: CALIGOIDA),
UN PARÁSITO DE LAS AGALLAS DE UN TIBURÓN ZORRA

Procedente de una especie de tiburón zorra *Alopias superciliosus*, se describe *Bariaka alopiae* n. gen., n. sp. Este nuevo género ha sido colocado en la familia Eudactylinidae Yamaguti, 1963 y difiere de todos los otros géneros de la familia por tener 18 segmentos en la primera antena. El parásito fué recolectado en Madagascar y el Océano Pacífico Oriental y se encuentra en las agallas del huésped.

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